

**IN THE CLAIMS:**

Please cancel claims 2, 5-7, 9, 12-14, 16, 18-20, 22, and 25-27; and, amend the remaining claims as follows:

1. (Currently Amended) A method of incrementally maintaining algebraic functions in automatic summary tables (ASTs) of at least one relational database, said method comprising:

associating a work area with each algebraic function of said algebraic functions in each AST, wherein multiple algebraic functions share the same work area;

populating variables within each work area for each algebraic function when each AST is created and when each AST is updated;

maintaining each work area by adding and subtracting to and from associated variables of each work area when associated data changes in said relational database;

computing each algebraic function; and

reporting said algebraic functions to a user.

2. (Cancelled).

3. (Currently Amended) The method ~~in~~ according to claim 2 1, all the limitations of which are incorporated herein by reference, wherein said multiple algebraic function share the same work area when one of: said algebraic function match exactly; said algebraic functions match partially; and said algebraic functions have an intersection.

4. (Currently Amended) The method ~~is~~ according to claim 1, all the limitations of which are incorporated herein by reference, wherein said computing process comprises recomputing said algebraic function after one or more of said variables have changed.

5-7. (Cancelled).

8. (Currently Amended) A method of updating an automatic summary table (AST), wherein said AST stores derived data from multiple dynamic data tables and said AST comprises multiple algebraic functions, said method comprising:

creating a ~~separate~~ work area for each algebraic function within said AST,  
wherein multiple algebraic functions share the same work area;

maintaining each work area by adding and subtracting to and from associated variables of each work area when associated data changes in said relational database;

integrating said changes into said AST by computing each algebraic function; and reporting said algebraic functions to a user.

9. (Cancelled).

10. (Currently Amended) The method ~~is~~ according to claim 9 8, all the limitations of which are incorporated herein by reference, wherein said multiple algebraic function share the same work area when one of:

said algebraic function match exactly;

said algebraic functions match partially; and

said algebraic functions have an intersection.

11. (Currently Amended) The method ~~is~~ according to claim 8, all the limitations of which are incorporated herein by reference, wherein said computing process comprises recomputing said algebraic function after one or more of said variables have changed.

12-14. (Cancelled).

15. (Currently Amended) A method of incrementally maintaining algebraic functions in automatic summary tables (ASTs) of at least one relational database, said method comprising:

associating a work area with each algebraic function in each AST, wherein multiple algebraic functions share the same work area;

populating variables within each work area for each algebraic function when each AST is created and when each AST is updated;

maintaining each work area by adding and subtracting to and from associated variables of each work area when associated data changes in said relational database;

recomputing said algebraic function after one or more of said variables have changed; and

reporting said algebraic functions to a user.

16. (Cancelled).

17. (Currently Amended) The method ~~in~~ according to claim 15, all the limitations of which are incorporated herein by reference, wherein said multiple algebraic function share the same work area when one of:

said algebraic function match exactly;

said algebraic functions match partially; and

said algebraic functions have an intersection.

18-20. (Cancelled).

21. (Currently Amended) A program storage device readable by computer, tangibly embodying a program of instructions executable by the computer to perform a method of incrementally maintaining algebraic functions in automatic summary tables (ASTs) of at least one relational database, said method comprising:

associating a work area with each algebraic function in each AST, wherein multiple algebraic functions share the same work area;

populating variables within each work area for each algebraic function when each AST is created and when each AST is updated;

maintaining each work area by adding and subtracting to and from associated variables of each work area when associated data changes in said relational database;  
computing each algebraic function; and  
reporting said algebraic functions to a user.

22. (Cancelled).

23. (Currently Amended) The program storage device ~~in~~ according to claim 22 21, all the limitations of which are incorporated herein by reference, wherein said multiple algebraic function share the same work area when one of: said algebraic function match exactly; said algebraic functions match partially; and said algebraic functions have an intersection.

24. (Currently Amended) The program storage device ~~in~~ according to claim 21, all the limitations of which are incorporated herein by reference, wherein said computing process comprises recomputing said algebraic function after one or more of said variables have changed.

25-27. (Cancelled).